

IN THE CLAIMS:

Please amend the claims as follows:

1. A substrate processing chamber comprising:
- (a) a support;
 - (b) a gas distributor;
 - (c) a gas energizer;
 - (d) a wall comprising a radiation transmitting portion;
 - (e) a mask overlying the radiation transmitting portion, the mask

having an aperture; and

(f) [(e)]an exhaust,

whereby a substrate held on the support may be processed by process gas distributed by the gas distributor, energized by the gas energizer, and exhausted by the exhaust, and whereby the mask is adapted to reduce deposition of process residue on the radiation transmitting portion and whereby radiation may be transmitted through the aperture of the mask and the radiation transmitting portion.

2. A substrate processing chamber according to claim 1 wherein the [mask comprises an] aperture has [having] an aspect ratio that is sufficiently large to reduce access of process gas to the radiation transmitting portion.

3. A substrate processing chamber according to claim 1 wherein the [mask comprises an] aperture has [having] an aspect ratio of from about 1:1 to about 12:1.

4. A substrate processing chamber according to claim 1 wherein the [mask comprises an] aperture has [having] an aspect ratio that is sufficiently small to allow ions of the energized process gas to enter the aperture and etch away the process residue formed on a sidewall of the aperture and on the radiation transmitting portion.

5. A substrate processing chamber according to claim 1 wherein the [mask comprises an] aperture has [having] an aspect ratio of from about 0.25:1 to about 3:1.

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6. A substrate processing chamber according to claim 1 wherein the [mask comprises an] aperture has [having] a diameter or width of from about 0.1 to about 50 mm, and a height of about 0.5 to about 500 mm.

19. A substrate processing chamber comprising:

- (a) a support;
- (b) a gas distributor;
- (c) a gas energizer;
- (d) a radiation transmitting portion comprising a mask with a plurality of apertures; and
- (e) an exhaust;

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whereby a substrate held on the support may be processed by process gas distributed by the gas distributor, energized by the gas energizer, and exhausted by the exhaust, and whereby radiation may be transmitted through the apertures and the radiation transmitting portion.

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21. A substrate processing chamber comprising:

- (a) a support;
- (b) a gas distributor;
- (c) a gas energizer;
- (d) a wall comprising an aperture, the aperture having an aspect ratio selected to reduce deposition of process residue;
- (e) an exhaust; and
- (f) a process monitoring system,

whereby a substrate held on the support may be processed by process gas distributed by the gas distributor, energized by the gas energizer, and exhausted by the exhaust, and whereby radiation may be transmitted through the aperture to the process monitoring system.

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27. A window according to claim 26 wherein the [mask comprises an] aperture has [having] an aspect ratio that is sufficiently large to reduce access of process gas to the radiation transmitting portion.

28. A window according to claim 26 wherein the [mask comprises an] aperture has [having] an aspect ratio of from about 1:1 to about 12:1.

29. A window according to claim 26 wherein the [mask comprises an] aperture has [having] an aspect ratio that is sufficiently small to allow ions of an energized process gas to enter the aperture and etch away the process residues formed on a sidewall of the aperture and on window.

30. A window according to claim 26 wherein the [mask comprises an] aperture has [having] an aspect ratio of from about 0.25:1 to about 3:1.

31. A window according to claim 26 wherein the [mask comprises an] aperture has [having] a diameter or width of from about 0.1 to about 50 mm, and a height of about 0.5 to about 500 mm.

Please add the following claims:

59. A substrate processing chamber comprising:
(a) a support capable of supporting a substrate;
(b) a ceiling at least partially facing the support, the ceiling having an opening therein;
(c) an inductor antenna covering at least a portion of the ceiling;
and
(d) a monitoring system capable of detecting radiation transmitted through the opening.

60. A chamber according to claim 59 wherein the ceiling comprises a portion comprising SiO_2 .

61. A chamber according to claim 59 wherein the ceiling comprises a portion comprising Si.

62. A chamber according to claim 59 wherein the ceiling comprises a portion comprising Al_2O_3 .

63. A chamber according to claim 59 wherein the ceiling comprises a portion comprising TiO_2 .

64. A chamber according to claim 59 wherein the ceiling comprises a portion comprising ZrO_2 .

65. A substrate processing chamber comprising:
- (a) a support having a surface capable of supporting a substrate;
 - (b) a gas distributor;
 - (c) a gas energizer;
 - (d) a wall comprising a radiation transmitting portion, the radiation transmitting portion being tilted relative to the support surface;
 - (e) an exhaust,

whereby a substrate on the support surface may be processed by process gas distributed by the gas distributor, energized by the gas energizer, and exhausted by the exhaust, and whereby radiation may be transmitted through the radiation transmitting portion.

66. A chamber according to claim 65 wherein the radiation transmitting portion is tilted at least about 2 degrees relative to the support surface.

67. A chamber according to claim 65 wherein the radiation transmitting portion is tilted from about 2 degrees to about 15 degrees relative to the support surface.

68. A chamber according to claim 65 wherein the radiation transmitting portion is above the support surface.

69. A chamber according to claim 65 further comprising a process monitoring system, whereby radiation may be transmitted through the radiation transmitting portion to the process monitoring system.

70. A chamber according to claim 65 further comprising a mask overlying the radiation transmitting portion.

71. A chamber according to claim 70 wherein the mask has an aperture.